

REMARKS

By the present Amendment, kindly substitute the three sheets of formal drawings submitted herewith as "REPLACEMENT SHEETS" for the informal drawings filed with the application. Fig. 5 has been amended to remove the redundant label "58" and corresponding lead line for the MUX 59. Accordingly, Applicants respectfully submit that the drawings objections are overcome.

By the present Amendment, claim 21 has been amended to overcome the rejection under 35 U.S.C. § 112, second paragraph. Claim 21 recites the limitations of allowed claim 3 and the base independent claim 1. Claim 21 now also recites limitations from claim claim 2 to provide antecedent basis for "said index data."

In addition, by the present amendment, claim 15 has been amended to recite the limitations of claim 16. Claim 16 has been canceled. Claim 19 has been amended to correct a typographical error.

In the office action, claims 4-6 and 10-23 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,029,045, to Picco et al. The office action, however, only states grounds for rejecting claims 5-6 and 11-23. Accordingly, claims 4 and 10 are believed to be allowable as indicated in the Office Action mailed on June 29, 2004.

The Applicants respectfully submit that the Picco et al patent does not teach or suggest the claimed invention. As will be discussed in further detail below, the system disclosed in the Picco et al patent does not employ progress information or content segment progress data as claimed in the independent claims 15 (as amended herein), 21 and 23. Secondly, the system disclosed in the Picco et al patent does not provide its multiplexers with predefined content segments as claimed in independent claims 20 and 21. Thirdly, the system disclosed in the Picco et al patent does not employ index data at a transmitter or receiver as claimed in independent claims 14, 21 and 22, respectively.

The present invention increases bandwidth efficiency by (1) storing content segments at receivers for playback in real-time with a received broadcast signal; and (2) by transmitting, in lieu of the content segments themselves, index information or content segment identifiers and progress data to facilitate insertion of the locally-stored content segments into the received broadcast signal. As stated on page 6, line 30 through page 7, line 2 of the application, progress data indicates “the *current time index in a content segment at a particular point in time during the transmission and playback* (emphasis added) of a payload channel.” As recited in originally filed claim 16, which forms a part of the original disclosure, progress information indicates “how much of the content segment remains to be played back via said output device at any given point during the duration of the content segment for substantially real-time playback during reception of said broadcast signal.”

In other words, the progress data as claimed is not merely a time of day for playback, as the office action appears to suggest by referring to a content profile as disclosed in the Picco et al patent and to column 6, lines 59-67 therein. First, the content profile described at column 7, line 55 to column 8, line 6 has no time of day or progress data, but rather only statistical data (e.g., a coefficient or distribution variable) about which households should download which content for local storage. Second, the description at column 6, lines 59-67 of the Picco et al patent merely describes data stored with a piece of local content at the database 146 at an uplink facility 102 such as “utilization directives” comprising time of day the local content can be viewed and view interval (i.e., a range of dates for viewing). None of the disclosed data stored with the local content pieces at the uplink facility 102 of Picco et al includes progress data as described in the specification and claimed.

Unlike the system disclosed in the Picco et al patent, the retrieval and playback of the predefined content segments at an apparatus as claimed is part of the programming in the broadcast signal and not the optionally inserted local content. Thus, the progress data

enables the apparatus to insert a partial content segment into a broadcast stream being played back even if that part of the stream designated for a predefined content segment has already partially elapsed (e.g., a user of the claimed apparatus changes channels and has switched into the middle of playback of a predefined content segment on the new channel). The progress data for that predefined content segment in the received broadcast signal indicates the *particular point in time during the transmission and playback* of a channel at which to play the predefined content segment. Withdrawal of the 35 U.S.C. §102(e) rejection of claims 15, 21 and 23 and their corresponding dependent claims 4, 10 and 17-19 is therefore respectfully requested.

Further, the system disclosed in the Picco et al patent does not suggest the use of progress information or content progress data as claimed. With reference to Fig. 10 and column 13, line 65 through column 14, line 16 of the Picco et al patent, a set-top box displays programming data until a local content space in the received programmed data stream is detected, as indicated via steps 252 and 254 of the flow chart depicted in Fig. 10. Thus, programming data is played unless retrieved local content is spliced into the received programmed data stream, as indicated via step 258 in Fig. 10. Accordingly, in contrast with the present invention, no progress data is needed to indicate the above-referenced “*particular point in time during the transmission and playback of*” a received programmed data stream at which to splice in the local content. In the system disclosed in the Picco et al patent, programming is not interrupted if local content is not spliced therein. By contrast, the received broadcast stream being played back via the disclosed invention would have an apparent dead spot therein if the indexed content were not multiplexed therewith at the intervals indicated in the broadcast stream.

Claims 20 and 21 each recite a multiplexer “configured to receive as inputs said control signal generated by said processing device, said content segments from said receiver and said selected predefined content segments,” among other aspects of the present invention. The Picco et al patent discloses two embodiments for a set-top box in

Figs. 7 and 8 thereof. Only Fig. 8 depicts multiplexers 206 and 208. The Applicants respectfully submit that the local content is provided to the splicers 190 and 192 in Fig. 8 and not to the multiplexers 206 and 208. These multiplexers therefore do not anticipate claim 20 or claim 21, nor do they suggest the claimed invention. As stated above in connection with the use of progress data, since the claimed invention multiplexes live content with retrieved local content, it requires progress data. The system in the Picco et al patent, on the other hand, can play back programming data uninterrupted until a local content space in the programming data stream is detected and filled via splicer. Further, the Picco et al patent teaches away from providing local content to the multiplexers 206 and 208 since the splicers 190 and 192 are needed to perform required reformatting of MPEG signals before inserting a selected piece of local content into a programming data stream (see column 11, line 48 through column 12, line 30). Accordingly, withdrawal of the 35 U.S.C. §102(e) rejection of claims 20 and 21 and their corresponding dependent claims 4, 5 and 6 is therefore respectfully requested.

Finally, claims 14, 21 and 22 each recite index data provided in the control data transmitted with a broadcast signal for identifying predefined content segments stored at remote locations or receivers. The index data facilitates retrieval of predefined content segments at a receiver.

The office action apparently relies on content profiles disclosed in the Picco et al patent to teach index data as claimed. This is incorrect. First, the text at column 6, line 59 to column 7, line 2 referred to in the Picco et al patent relates to an *uplink* facility database 146, and not a memory device associated with a receiver as claimed in claim 22. Second, the content profiles described at column 7, line 55 to column 8, line 6 of the Picco et al patent are statistical data (e.g., a coefficient or distribution variable) that indicate which households should download which content for local storage and not identifiers for stored local content.

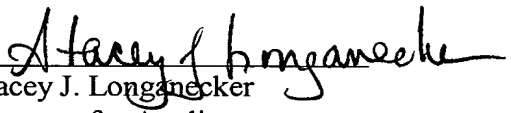
Although column 6, lines 59-67 of the Picco et al patent indicate that an uplink facility database 146 can store data with each piece of local content such as the content profile and a unique content identified code, nothing else in the Picco et al patent teaches or suggests that index data or an identifying code is provided in the programming data stream to tell a set-top box which local content piece to splice into the programming data stream being played back via the set-top box. To do so is in complete contrast with the object of the invention disclosed in the Picco et al patent (i.e., to provide customized playback of selected local content at a set-top box based on user preferences). The Picco et al patent simply does not contemplate transmitting a broadcast signal that tells a plurality of set-top boxes to retrieve and play the same locally stored content piece. Instead, as stated in column 14, lines 8-12 of the Picco et al patent with respect to Fig. 10, the set-top box “determines, based on user preferences and the content profiles of the pieces of local content stored on the disk, which piece of local content is going to be inserted into the programming data stream.” Thus, the system disclosed in the Picco et al patent would not provide index data for identifying content in a broadcast signal as claimed and require set-top boxes to retrieve the same piece of local content. Although the Picco et al patent describes the use of control data in a local content space of programming data that “indicates which *type* of local content may be inserted” in a particular local content space, this does not teach index data as claimed since it is only referencing type and not an identifier. Further, it is improper to use language in the cited patent out of context and contrary to the remaining disclosure of the reference. Withdrawal of the rejection of independent claims 14, 21 and 22 and corresponding dependent claims 11-13, 5 and 6 as being anticipated by the Picco et al patent is believed to be proper and is respectfully requested.

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any

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questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

  
Stacey J. Longanecker  
Attorney for Applicants  
Reg. No. 33,952

Roylance, Abrams, Berdo & Goodman, L.L.P.  
1300 19<sup>th</sup> Street, N.W., Suite 600  
Washington, D.C. 20036  
(202) 659-9076

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